

Figure 1: Agent initialization and assignment

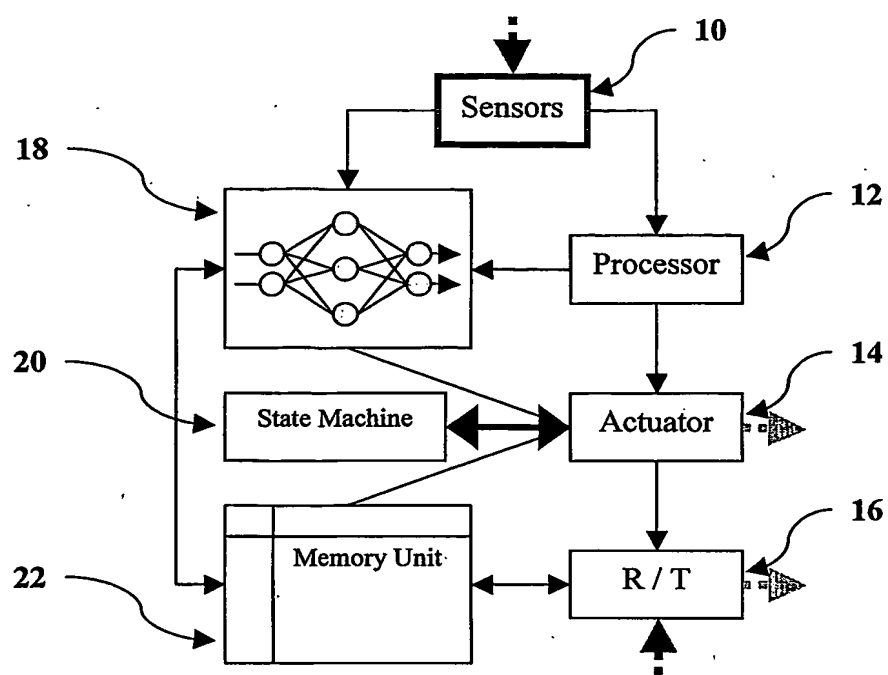


Figure 2: Agent Components

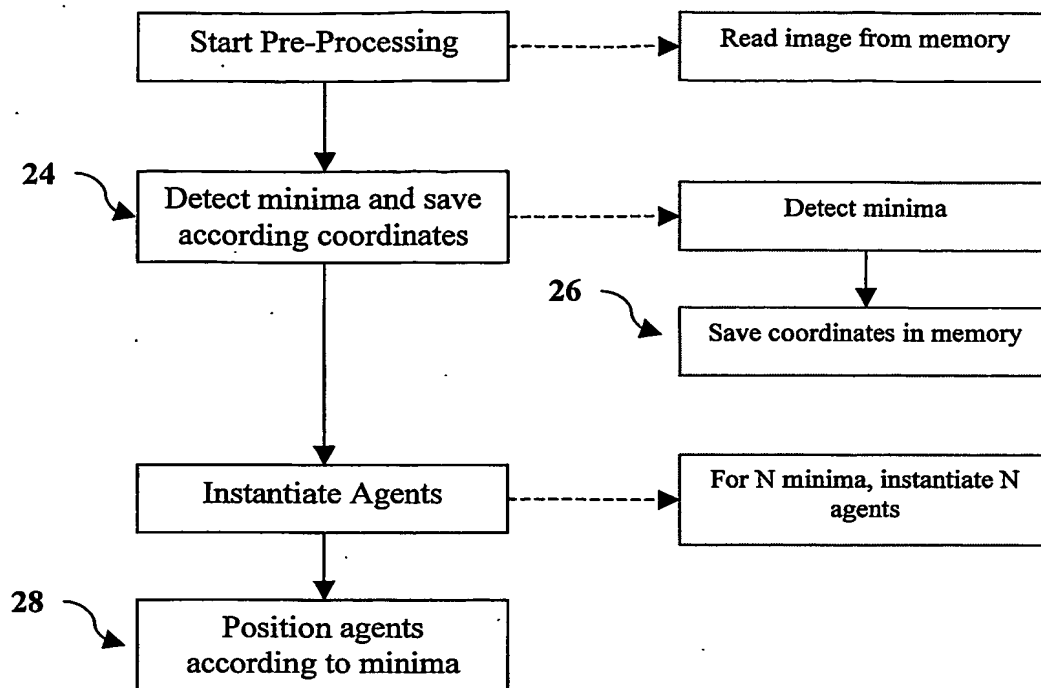


Figure 3: Example Agent assignment

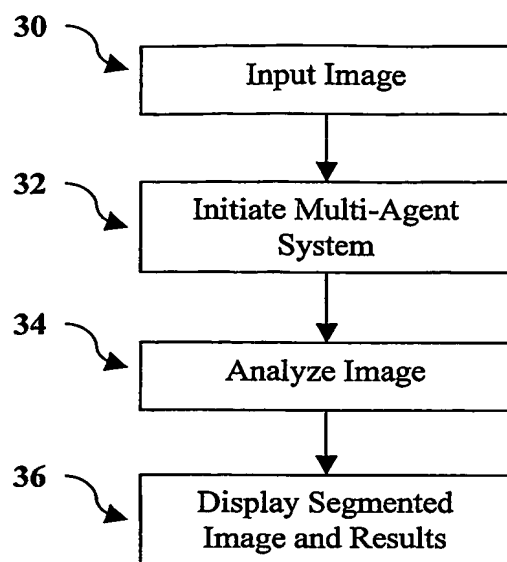


Figure 4: Overall system operational flow

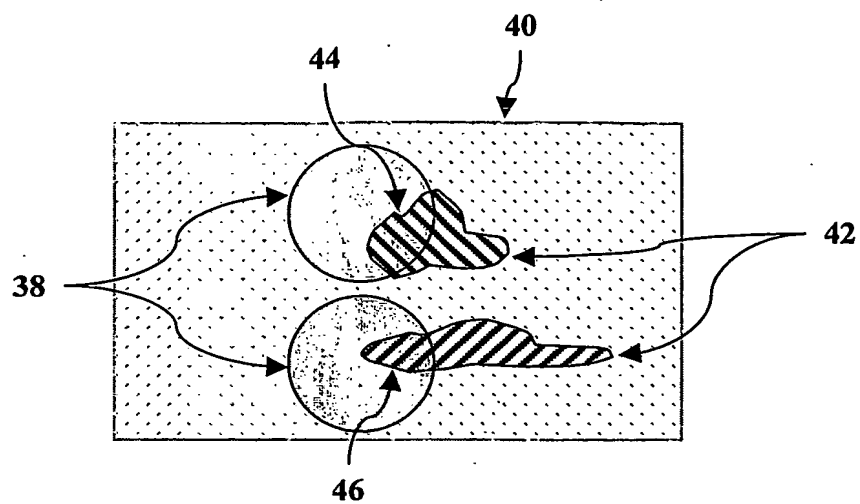


Figure 5: Agent Sensors in portion of image

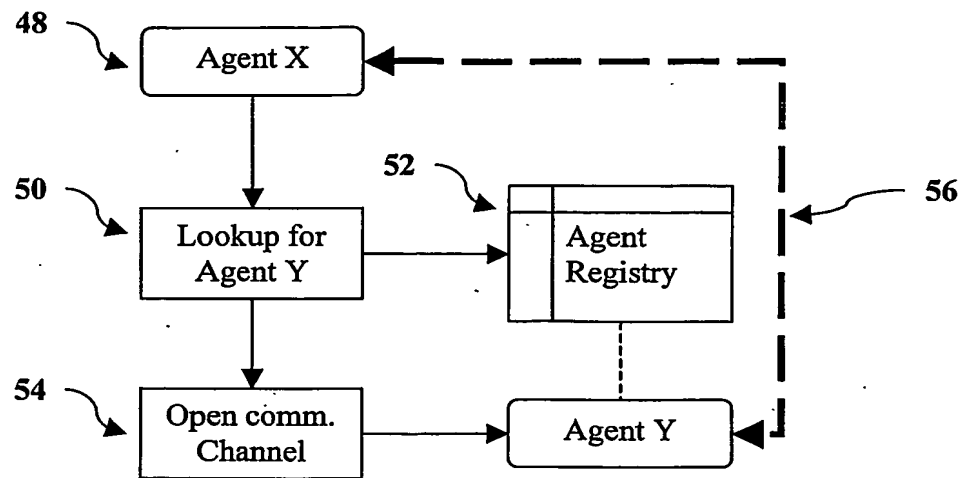


Figure 6: Agent communication

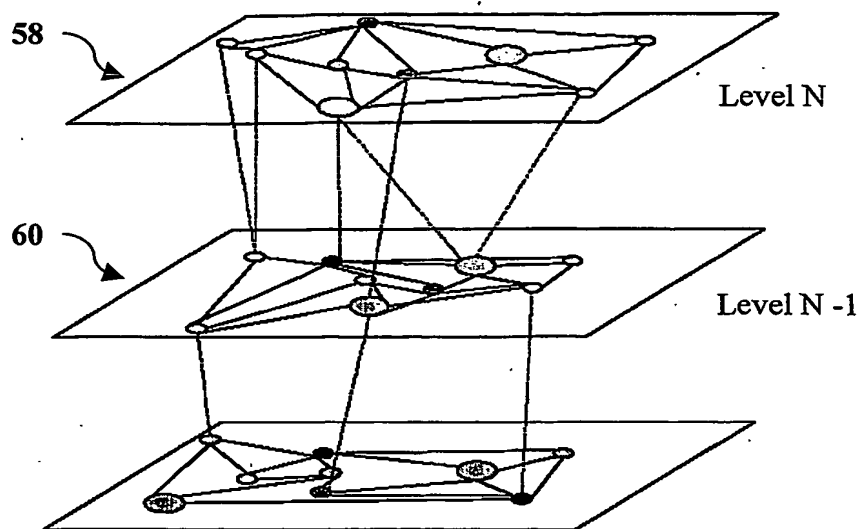


Figure 7: Multiscale Agent cooperation

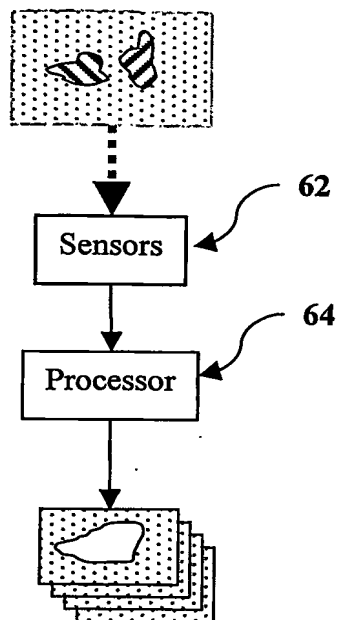


Figure 8: Multiscale Sensors

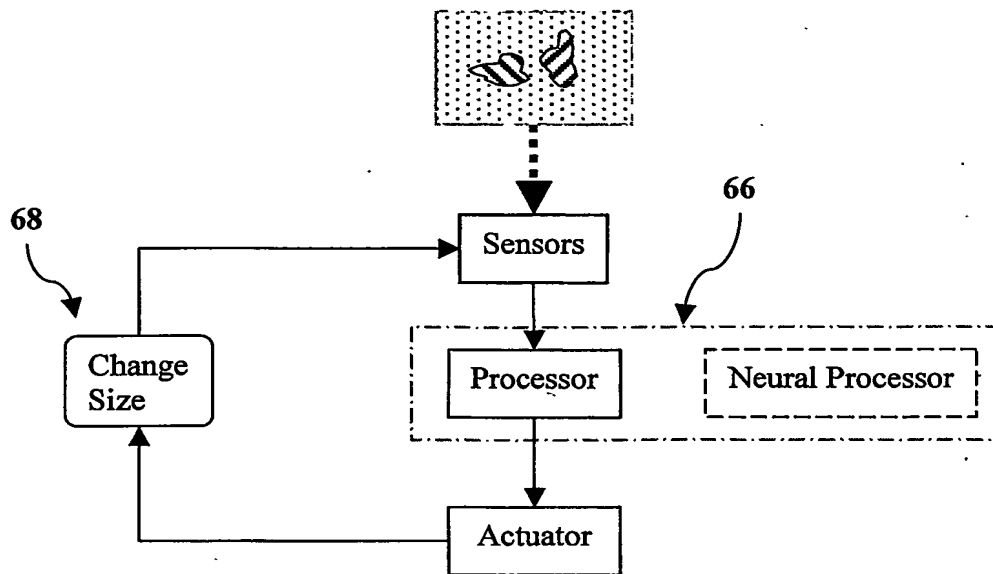


Figure 9 a: Multiresolution Sensing Flow chart

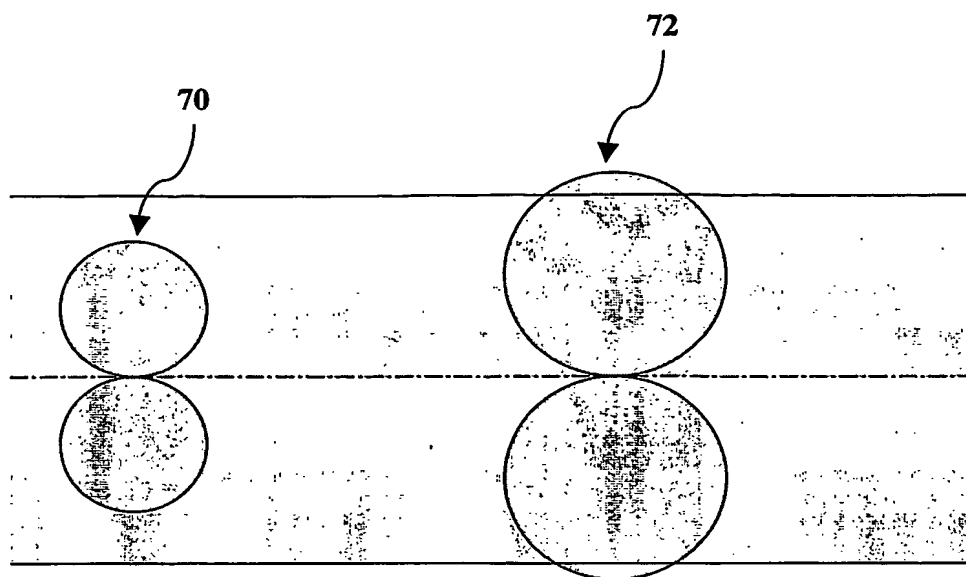


Figure 9b: Multiresolution Sensing Illustration

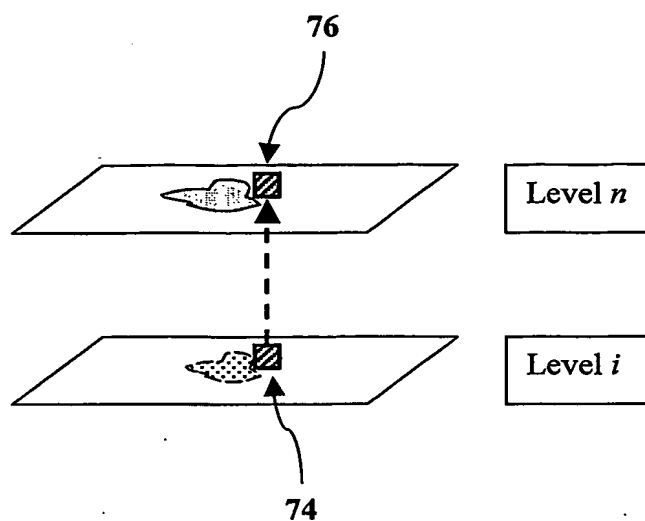


Figure 10 a: Higher scale information gathering by single agent

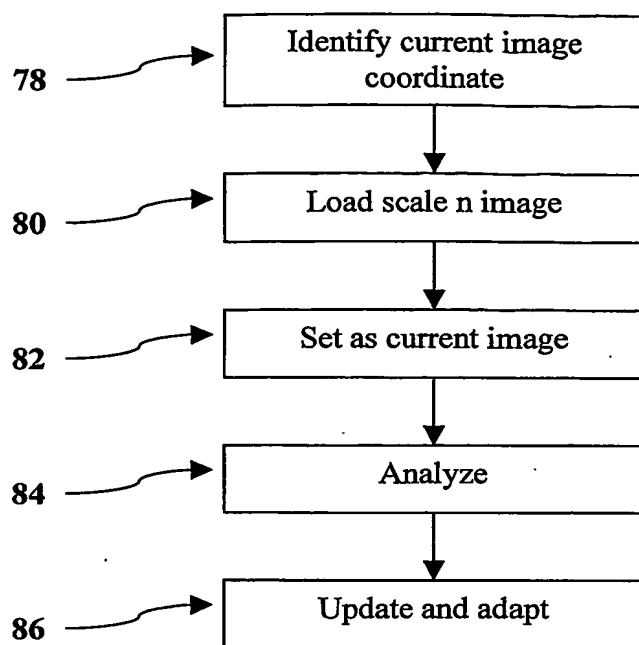


Figure 10 b: Higher scale information gathering by single agent

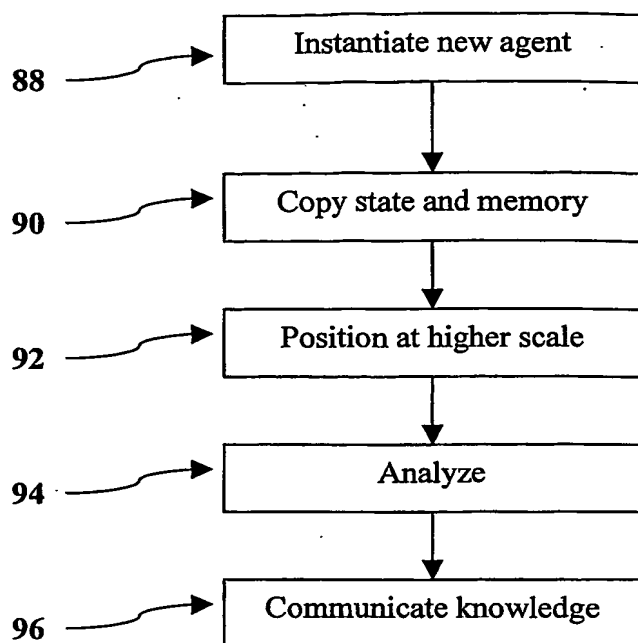


Figure 10 c: Higher scale information gathering by cloned agent

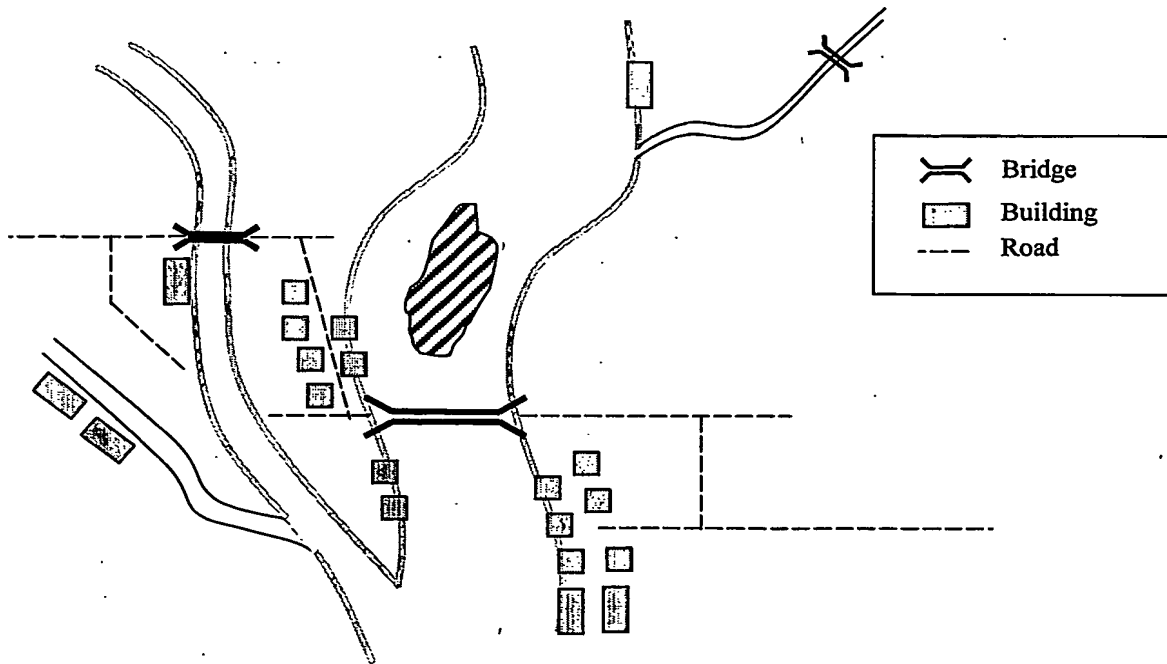


Figure 11: Illustration of a satellite image landscape

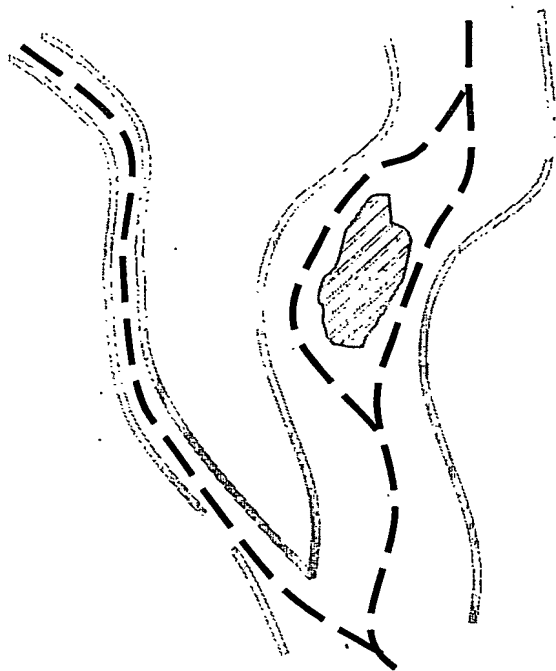


Figure 12 a: Extraction of main water regions and ridges

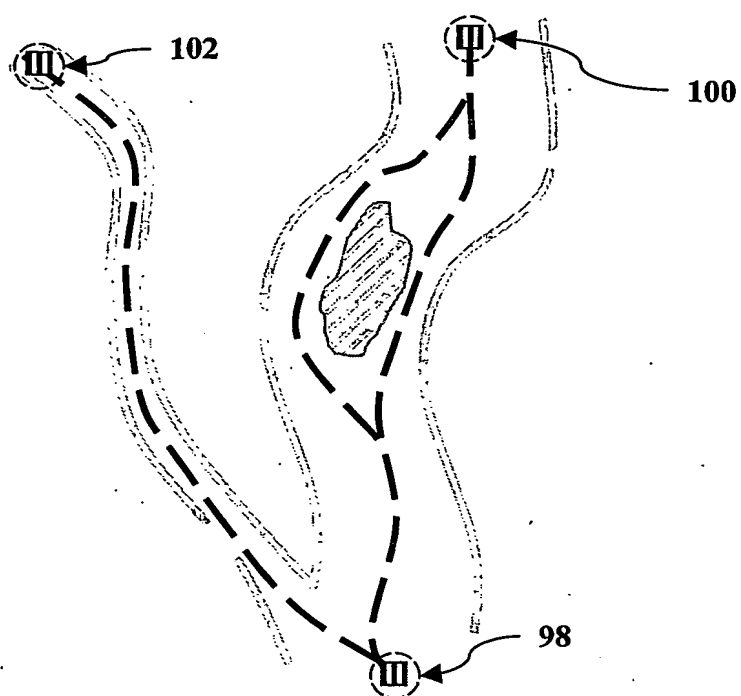


Figure 12 b: Agents initialization

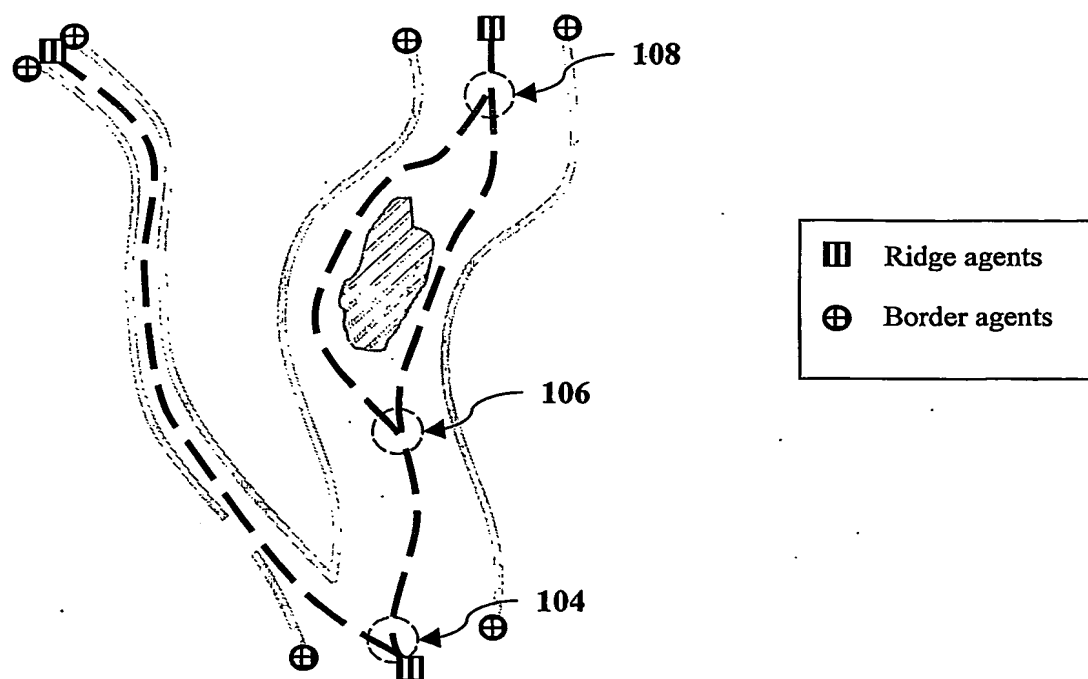


Figure 13: Border Agents init. and ridge agents path following

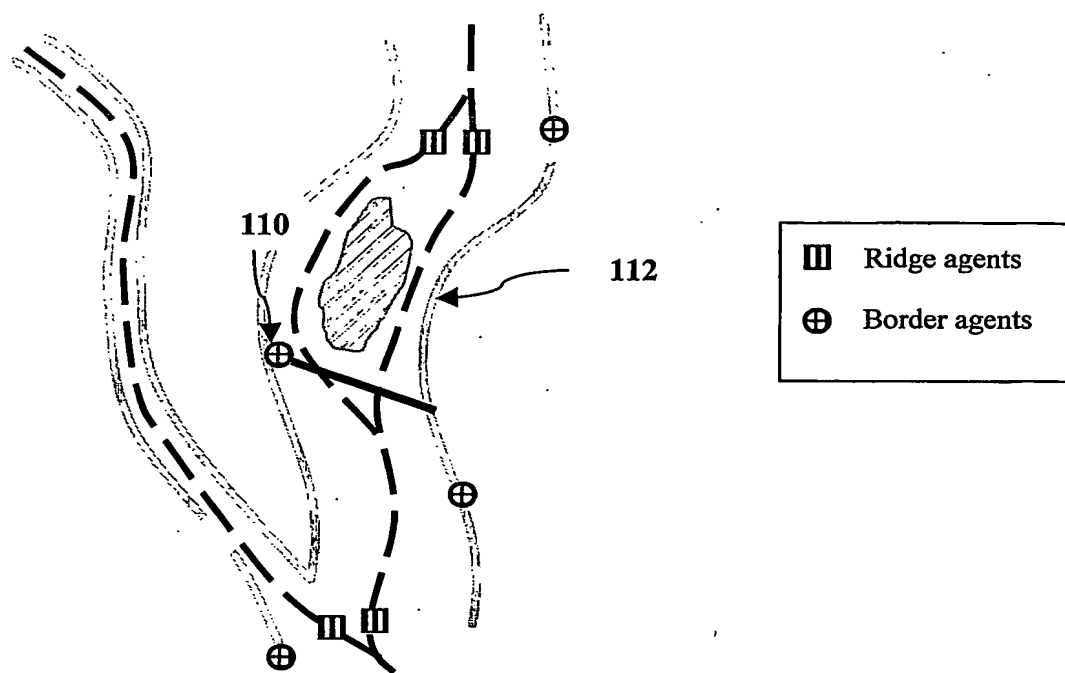


Figure 14 a: Bridge detection

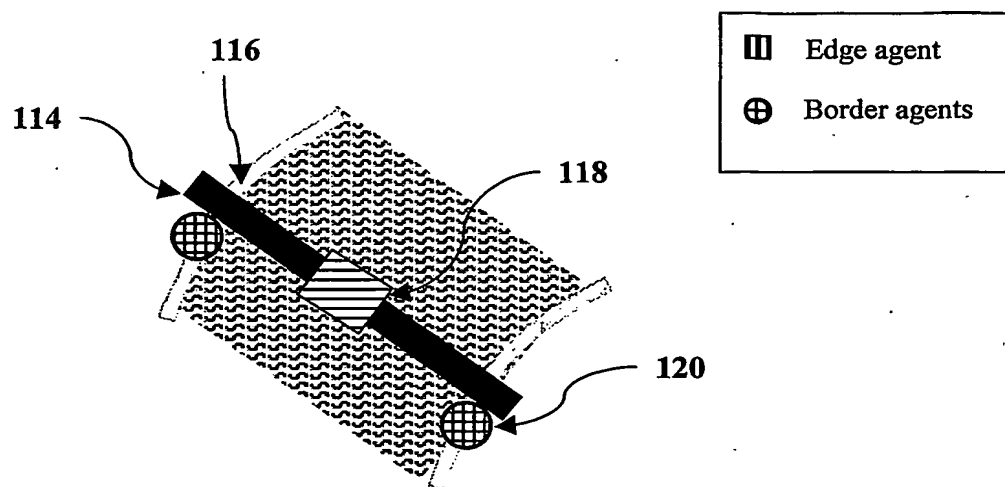


Figure 14 b: Discontinuity in border

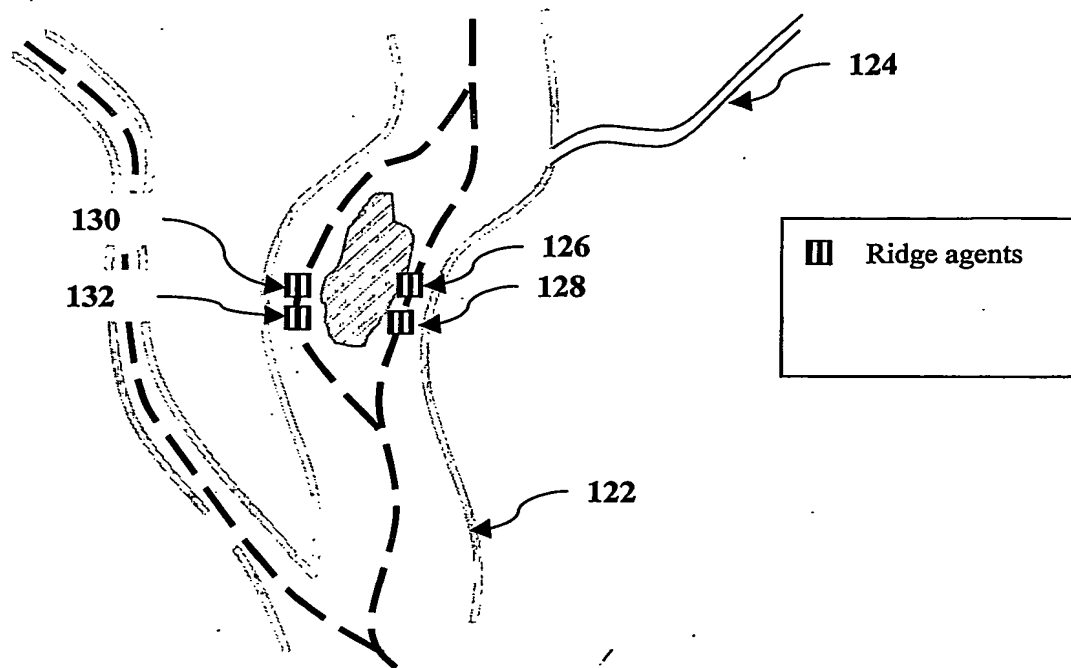


Figure 15 a: Semantic Water course detection

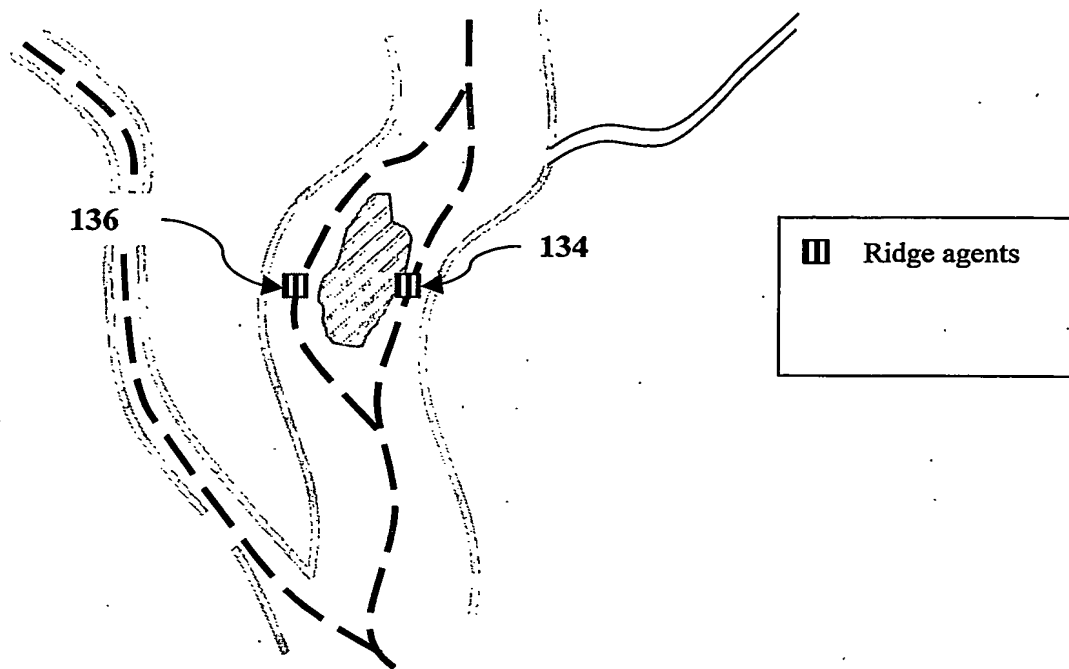


Figure 15 b: Semantic Water course detection

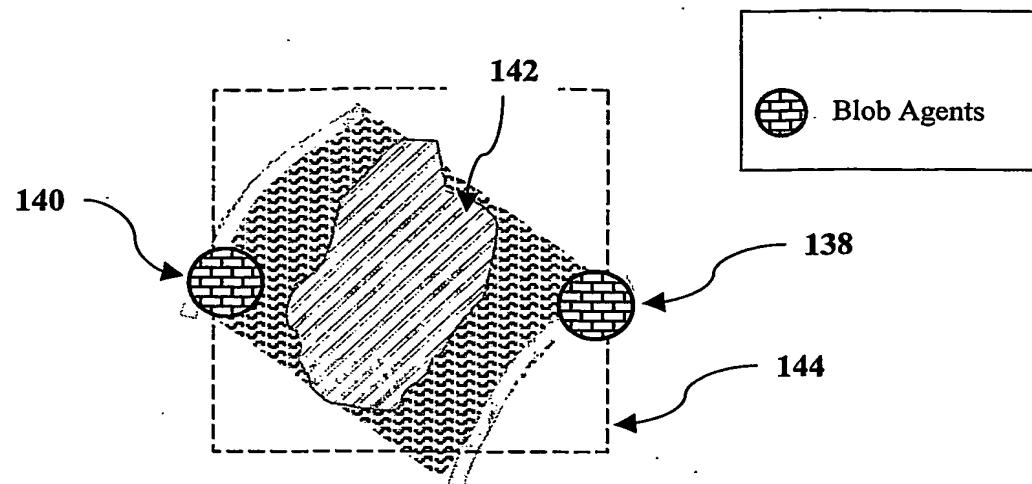


Figure 16 a: Higher scale blob detection

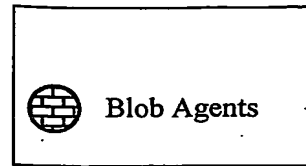
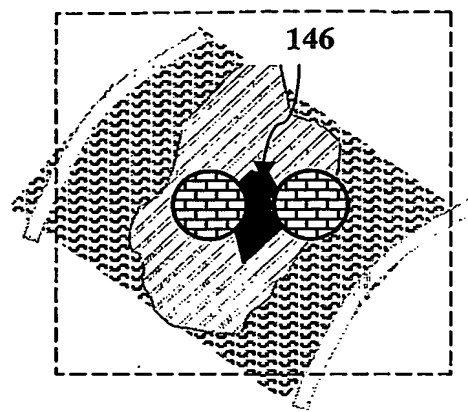


Figure 16 b: Higher scale blob detection

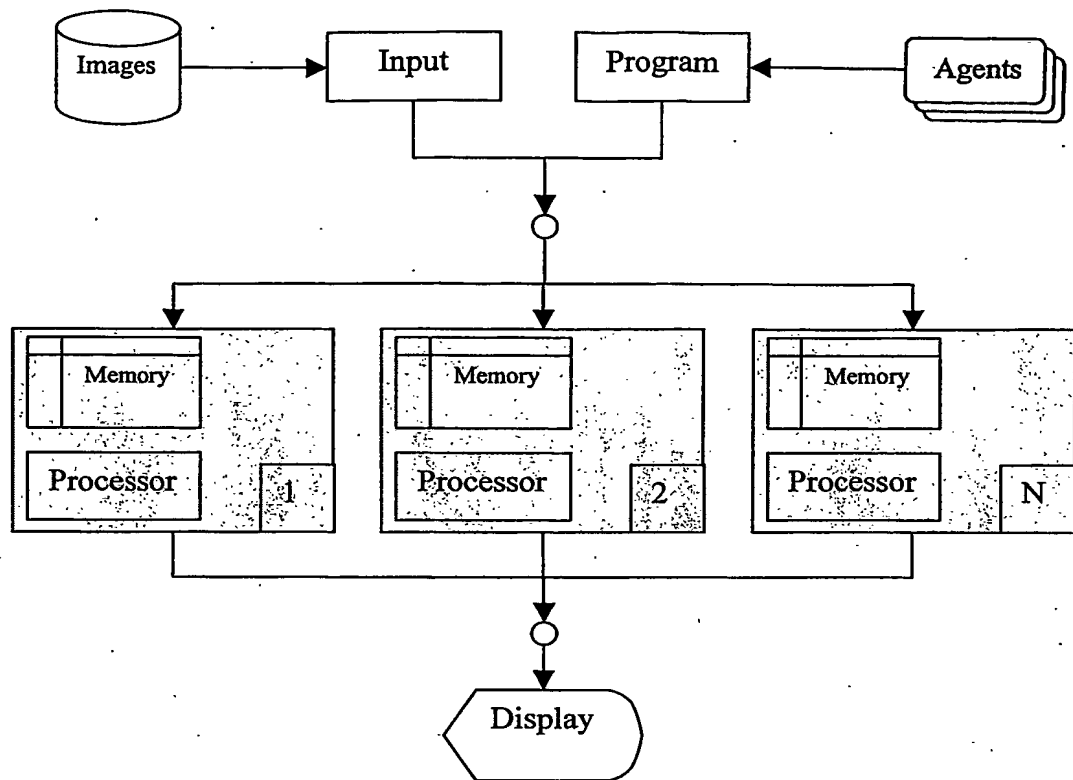


Figure 17: Apparatus with multiple processing nodes